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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/347,690	07/02/1999	MANPREET S. KHAIRA	884.107US1	4194
21186	7590	12/22/2003	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			CRAIG, DWIN M	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 12/22/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/347,690

Applicant(s)

KHAIRA ET AL.

Examiner

Dwin M Craig

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 10, 14, 16, 17, 18, 21, 24 and 28 is/are rejected.
- 7) ☒ Claim(s) Claims 2-9, 11-13, 15, 19, 20, 22, 23, 25-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-28 have been presented for examination.

Response to Arguments

2. Applicant's arguments filed on 29 September 2003 have been fully considered.

Examiners response is as follows:

Regarding Applicants submission of a declaration under 37 C.F.R. 1.132 in response to the 37 C.F.R. 1.105 request for information:

Applicants have argued that the *Khaira* reference is considered proprietary and confidential and therefore not a valid prior art reference. The Applicants have provided a declaration under 37 C.F.R. 1.132 (*see paper # 12*), to support the assertion that the *Khaira* reference is proprietary and confidential.

The Examiner asserts that after review of Applicant's arguments and the declaration provided, that the Applicants arguments are persuasive and withdraws the requirement to disclose under 37 C.F.R. 1.105 as submitted in paper number 10.

An updated search has revealed new art.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claim 28** is rejected under **35 U.S.C. 101** because the claimed invention is directed to non-statutory subject matter.

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Claim 28 recites a computer-readable medium having computer-executable instructions. It should be noted that code (i.e., a computer software program) does not do anything per se. Instead, it is the code stored on a computer-readable medium that, *when executed*, as opposed to *performing*, instructs the computer to perform various functions.

From the MPEP: Chapter 700, Patentable Subject Matter—Computer-related Inventions:

Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See *Arrhythmia*, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some "real world" value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application.

The following claim is a generic example of a proper computer program product claim;

A computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to perform the following:

Function A
Function B
Function C, etc...

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Independent **Claims 1, 10, 14, 16-18, 21, 24 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Rezek et al. U.S. Patent 5,956,256** in view of “HiPART: A New Hierarchical Semi-Interactive HW-/SW Partitioning Approach with Fast Debugging for Real-Time Embedded Systems” by Thomas Hollstein, Jurgen Becker, Andreas Kirschbaum and Manfred Glesner, hereafter referred to as the *Hollstein et al.* reference.

4.1 As regards independent **Claims 1, 10, 14, 16-18, 21, 24 and 28** the *Rezek et al.* reference discloses a circuit model for simulation (**Figure 3, Col. 8 Lines 11-63**), including boundary latches (**Figures 4A-15, Col. 10 Lines 28-43, Col. 11 Lines 38-44**) and node paths between first and second nodes (**Figure 4A**).

However, the *Rezek et al.* reference does not expressly disclose partitioning the latches into a plurality of partitions or maintaining a load balance within the plurality of partitions.

Rezek et al. discloses that there is a need in the art to support multi-cycle paths, specifically in high performance systems (**Col. 3 Lines 43-64**).

An ordinary artisan would have been motivated to search the behavioral simulation art in order to overcome the express deficiencies of the reference in regards to a dice partitioning tool, to find methods to simulate multi-cycle paths in high performance systems, which are complex,

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and therefore require a method of simulating and designing high-performance, complex systems.

In the related art of debugging real-time embedded systems, the *Hollstein et al.* reference discloses methods of partitioning designs (**Hollstein et al. all 5 pages**).

Thus, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have modified the boundary latch modeling and simulation methods of the *Rezek et al.* reference with the partitioning methods of the *Hollstein et al.* reference (***Hollstein et al. section 6 Conclusion***).

Allowable Subject Matter

5. Claims 2-9, 11-13, 15, 19, 20, 22, 23, 25-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. An updated search has revealed new art. New Art rejections have been applied to independent Claims 1, 10, 14, 16, 17, 18, 21, 24 and 28. Claims 2-9, 11-13, 15, 19, 20, 22, 23, 25-27 have been objected to. This action is made **NON-FINAL**.

6.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M Craig whose telephone number is 703 305-7150. The examiner can normally be reached on 9:00 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 703 305-9704. The fax phone numbers for the

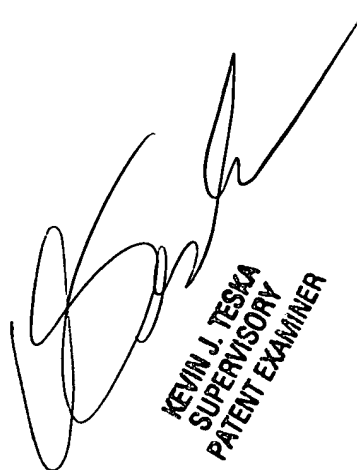
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organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

DMC

December 11, 2003



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER